CHAPTER 5

Inequality and Economic Rewards

IT WAS OVER 30 YEARS AGO that President John F. Kennedy said, "A rising tide lifts all the boats." The decade preceding his Presidency and the decade thereafter supported this optimism. Tremendous economic growth raised the incomes of American families at all levels, including the poor, and income inequality fell dramatically. Beginning in the late 1970s, however, this broad tide of equalizing growth turned, and inequality began to increase. The gap between rich and poor continued to widen through the 1980s and into the early 1990s, regardless of economic conditions. In the last few years some signs have begun to emerge that inequality may be stabilizing and perhaps even declining slightly, but the gap in economic rewards between rich and poor is still much larger than it was 20 years ago.

Economic inequality has several different dimensions. We begin by looking at trends in earnings inequality across and among workers as grouped by age, sex, and level of education. Earnings inequality is an important indicator in its own right, because it helps characterize the structure of the labor market. It is also an important contributor to inequality in household incomes, a broader measure of economic well-being that aggregates the resources of all household members and incorporates other income flows besides earnings. Finally, we consider some alternative measures of inequality that may better address differences in lifetime income across households.

Concerns with inequality are inseparable from concerns about the well-being of the poor, but a rise in inequality does not necessarily mean the poor are worse off. A rise in inequality is consistent with a scenario in which the circumstances of the poorest are improving, but the richest are experiencing even greater gains. Such a state of affairs is less troubling than one in which those at the top prosper while the living standards of those at the bottom stagnate or decline. It makes a profound difference to our understanding and to our policies which of these depictions of rising inequality is the correct one. Therefore, in addition to documenting trends in inequality, this chapter will focus specifically on the well-being of those at the bottom of the distribution.

RECENT TRENDS IN INEQUALITY

Before addressing longer term trends in inequality, we briefly explore the record of the recent past. Although it is too soon to tell whether a break in the long-term trend toward greater income inequality has occurred, income statistics over the past few years do show some reduction. From 1993 to 1995, income gains were observed throughout the income distribution, but the percentage increases were the largest for low-income households. One way to view these changes is to separate households into five equal groups based on their income (called quintiles) and estimate the increase in income received by each quintile. Chart 5–1 displays the results of such an analysis for the 1993-95 period. It shows that this period has seen gains for each quintile, which were largest for the lowest quintile and smallest for the highest.

Chart 5-1   **Real Household Income Growth by Quintile from 1993 to 1995**
Poor households experienced the largest income gains from 1993 to 1995.

Average annual percent change

Note: Household income adjusted by CPI-U.
Source: Department of Commerce.
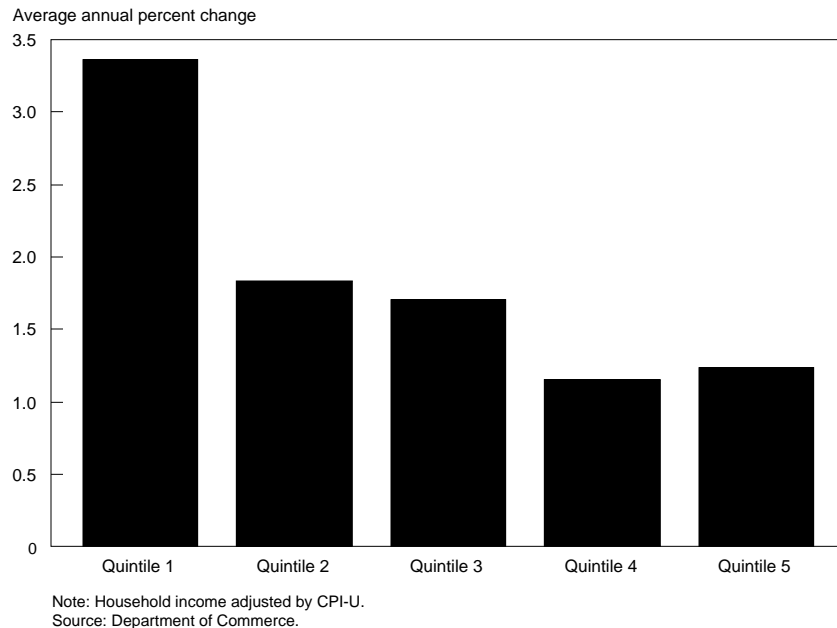
The "rising tide" theory might have predicted such results, given the ongoing economic expansion. Yet recent historical experience indicates that expansions do not always reduce inequality. Consider, for example, three years—1979, 1987, and 1995—when economic performance was similar: in all three years gross domestic product (GDP) grew by about 2 to 3 percent, the unemployment

rate was about 6 percent, and the economy had been expanding for a few consecutive years. Yet whereas the percentage of the population living in poverty (i.e., the poverty rate) fell by 0.7 percentage point in 1995, it actually rose by 0.3 percentage point in 1979 and fell by only 0.2 percentage point in 1987. The Gini index of household income inequality (which ranges from 0, indicating perfect equality across income quintiles, to 1, which would indicate that all income is going to the top quintile) rose in both 1979 and 1987, but fell in 1995. Recent data show that inequality has been reduced beyond what would have been predicted by cyclical factors.

Although these results are encouraging, it is too soon to tell whether the longer term trends of increasing inequality have been reversed. The remainder of this chapter focuses on these longer term trends.

EARNINGS INEQUALITY

The incomes of most people consist mainly of earnings from labor. A large component of income differentials across households can be attributed to differences in the earnings of individuals. An examination of earnings is also facilitated by the individual nature of the measure: it is not necessary to adjust for the changes in household composition that so complicate discussions of household income. This section documents trends in earnings inequality in general, trends across workers with different characteristics, and trends across workers with similar characteristics, before attempting to identify the factors that can help explain the observed rise in inequality over time.

DOCUMENTING TRENDS IN EARNINGS INEQUALITY

Because earnings are a function of both the wage rate and the number of hours worked, we concentrate here on full-time, year-round workers so as to abstract from any biases due to changes in working hours over time. Men's earnings are the focus of this analysis, because the increasing labor force participation of women over time may have altered the composition of the female workforce in ways that might distort the results. For instance, if women with higher earnings potential have entered the labor market at a faster rate in recent years, measured inequality would appear to have increased, even if the underlying distribution of wages for women continuously employed has remained unchanged. After examining earnings inequality among men, we briefly examine trends among women.

For male workers we examine two ratios that compare earnings between workers at different points in the earnings distribution. One of these is the ratio of the earnings of a male worker at the

90th percentile (i.e., one whose wages exceed those of 90 percent of all male workers) to those of a male worker at the 50th percentile (i.e., the median male worker). This ratio is called the 90/50 earnings ratio. The other ratio, called the 50/10 earnings ratio, is that between the median worker and a worker who earns more than only 10 percent of workers. Estimating both these ratios is more useful than the common alternative of estimating the 90/10 ratio alone, because the 50/10 ratio provides more information on the well-being of those at the bottom of the distribution. Because the median male worker's wages have fallen somewhat in real terms, an increase in the earnings ratio between the 50th and the 10th percentiles indicates a larger reduction among those with low earnings. In 1995, annual earnings at the 10th, 50th, and 90th percentiles were $12,920, $31,497, and $70,314. (Note that the 90th-percentile figure is well below the huge salaries paid to top corporate executives; see Box 5–1.)

Trends in the 90/50 and the 50/10 earnings ratios for full-time, year-round male workers are shown in Chart 5–2. These data reveal that the male worker at the middle of the earnings distribution earned about 2.4 times the wages of the worker at the 10th percentile in 1995, compared with 2.2 times in 1979. The 90/50 earnings ratio rose by a similar amount, from about 1.9 in 1979 to 2.2 in 1995. The overall trend in both ratios is upward over most of this period, indicating increasing inequality across the wage spectrum.

Another way to document increasing wage inequality is to calculate the percentages of the workforce falling in each of several different earnings categories at different points in time. Chart 5–3 shows that a larger proportion of workers earned less than $15,000 in 1995 than in 1979 (when earnings are measured in constant 1995 dollars); at the other end of the distribution, a larger share of the workforce earned in excess of $75,000 in 1995 than in 1979. (The consumer price index, or CPI, is used in both calculations to adjust for inflation; potential biases introduced by using this index are described in Chapter 2.) These increases at the top and bottom of the distribution are offset by a reduction in the share of workers earning between $35,000 and $75,000.

BETWEEN-GROUP INEQUALITY

The trend in inequality may be better understood by first grouping workers according to certain key characteristics (educational attainment and age are two that are commonly used) and then separating observed wage differentials into two components: the differential observed between workers so grouped (between-group inequality) and the differential observed among workers in the same group (within-group inequality). Taking first the education dimen-

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Box 5–1.—Executive Compensation

One much-publicized aspect of earnings inequality has been the extraordinarily high level of compensation of top corporate executives. In 1995 the average compensation package for chief executive officers (CEOs) in a sample of 362 of the largest 500 U.S. firms was $1.5 million, and some CEOs received more than $10 million that year. Defenders of current corporate pay scales argue that today's executive compensation packages, with their moderate base pay and generous stock options, encourage high-level management to act in the shareholders' interests by providing greater rewards for good long-run performance. Critics respond that it is unclear in practice how much executive compensation is even designed to be "performance-based." For example, compensation in the form of stock options rewards executives for share price increases even when these are attributable to market-wide price gains rather than the executives' own actions. In addition, such compensation practices may have adverse effects on worker morale, when, for instance, a firm pays its top management very high salaries at the same time that it is laying off workers.

However this debate is resolved, the effect of high executive compensation on measured earnings inequality throughout the economy is minimal, because top executives represent only a tiny fraction of the workforce. As we saw in Chart 5–2, earnings disparities have been growing even when measured by the 90/50 earnings ratio. The executives whose compensation is the subject of this controversy receive a level of earnings that places them well above the 90th percentile, and therefore even a doubling of their salaries would have no impact on trends in this measure. And executive earnings obviously have no influence at all on the 50/10 ratio, which has been increasing as well.

sion, Chart 5–4 shows the trend in the ratio of the earnings of the median male college graduate to that of the median male high school graduate. The chart reveals that returns to education grew tremendously during the 1980s and early 1990s. In 1980 the median male college graduate earned roughly one-third more than the median male high school graduate, but this wage premium grew to over 70 percent by 1993. Since then that trend has slowed, and the ratio even declined slightly in 1995.

Experience on the job is another important dimension in studying inequality. The premium paid to more experienced workers has also been increasing over the past two decades or so. As shown in

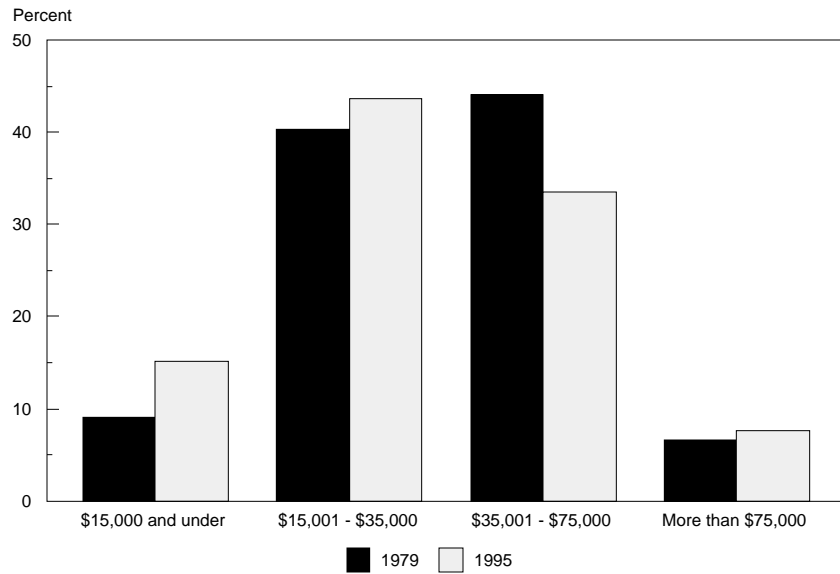Chart 5-2 **Earnings Ratios for Male Full-Time, Year-Round Workers**
Two measures show that earnings inequality for men has risen since the late 1970s.
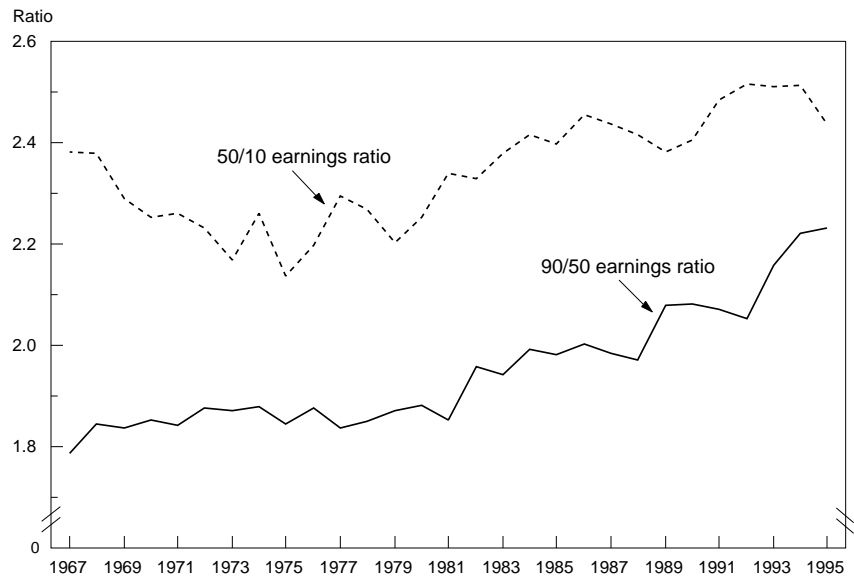
Ratio

Source: Council of Economic Advisers tabulations of the March Current Population Survey.

Chart 5-3 **Male Full-Time, Year-Round Workers by Real Earnings Range**
The share of male workers earning $15,000 and under increased dramatically
between 1979 and 1995.

Percent

Note: Earnings in 1995 dollars, adjusted by CPI-U-X1.
Source: Council of Economic Advisers tabulations of the March Current Population Survey.

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Chart 5-4 **College/High School Median Earnings Ratio for Male Full-Time, Full-Year Workers**
The earnings premium associated with college attendance has risen dramatically for men
since the late 1970s.
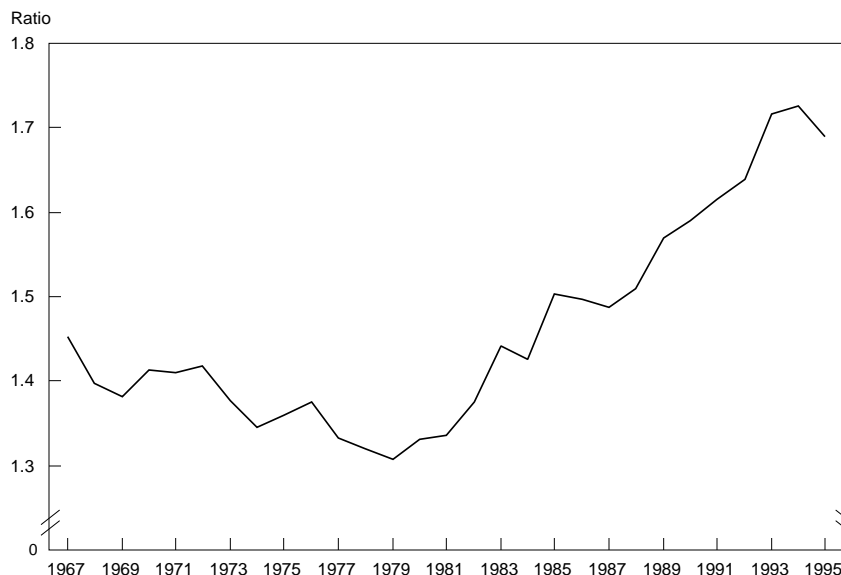
Ratio

Source: Council of Economic Advisers tabulations of the March Current Population Survey.

Chart 5–5, the median 45- to 54-year-old male worker earned roughly 50 percent more than the median 25- to 34-year-old worker in 1995, compared with a difference of less than 20 percent in 1979. The main reason for the increase is that young workers were paid less in 1995, not that older workers were paid more.
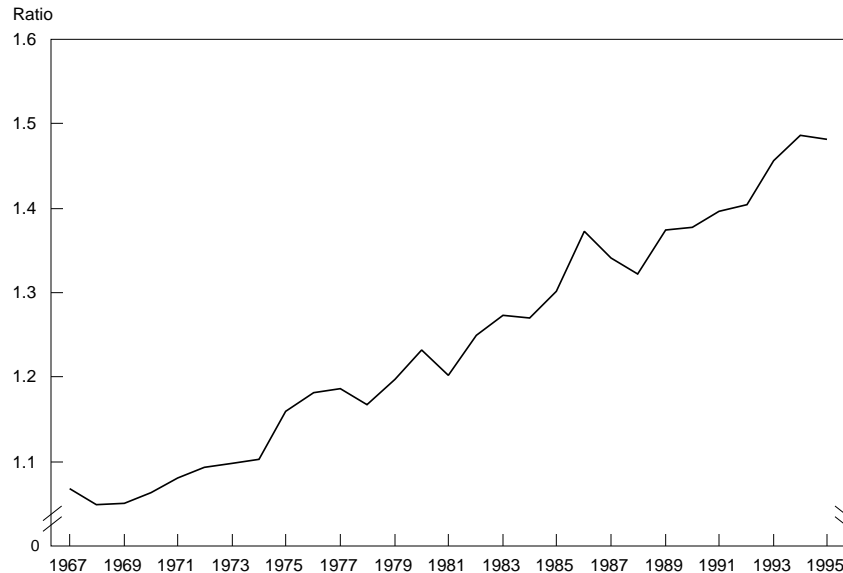
WITHIN-GROUP INEQUALITY

Within-group inequality is also on the rise and in fact accounts for about two-thirds of the total increase in earnings inequality. For instance, among male high school graduates both the 90/50 and the 50/10 earnings ratios have risen since about 1970 (Table 5–1). Although the upward trend in the 50/10 ratio apparently stopped in the late 1980s, that of the 90/50 ratio continues. Similar findings emerge for groupings of workers by age. Table 5–1 also shows the 90/50 and 50/10 ratios for 25- to 34-year-old full-time, year-round male workers. Within this group, the 90/50 ratio increased from about 1.6 to about 1.9 between 1979 and 1995.

EARNINGS INEQUALITY AMONG WOMEN

Women have experienced increases in earnings inequality similar to those of men. The 90/50 and 50/10 ratios of earnings for women working full-time, year-round began rising in the late 1970s and have continued upward through the 1980s and 1990s, as have

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Chart 5-5   **Ratio of Median Earnings of Males Age 45-54 to Those of Males Age 25-34**
The wage advantage of a 45- to 54-year-old man relative to a 25- to 34-year-old man has
increased virtually continuously, particularly since the mid-1970s.

Ratio

Source: Council of Economic Advisers tabulations of the March Current Population Survey.

those for men. The results presented in Charts 5–2 through 5–5
and Table 5–1 for men, with respect to overall, between-group, and
within-group inequality, generally find parallels in the patterns for
women. For instance, the wage premium received by college-edu-
cated women roughly doubled between 1978 and 1995, from 38 per-
cent to 70 percent.

EXPLANATIONS FOR INCREASING EARNINGS INEQUALITY

Alternative explanations for the observed increase in earnings in-
equality can be categorized into three broad groups: supply-side
factors, demand-side factors, and institutional factors. (A provoca-
tive alternative hypothesis is presented in Box 5–2.) Although no
clear consensus has emerged regarding the relative strength of
these alternatives, demand-side explanations play a large role.

A simple model of the labor market for more skilled, usually
higher paid workers and for relatively low paid, less skilled work-
ers will help clarify the role of supply- and demand-side factors.
Supply-side factors can increase inequality if they cause the supply
curve in the market for less skilled workers to shift outward by rel-
atively more than the supply curve in the market for more skilled
workers. As shown in Chart 5–6, such shifts would lead wages to
fall by a greater amount in the less skilled labor market than in

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TABLE 5–1.— *Earnings Ratios for Male High School Graduates
and 25– to 34–Year–Old Male Full-Time, Year-Round Workers*

Year	Male high school graduates		25– to 34–year–old male workers	
	90/50 ratio	50/10 ratio	90/50 ratio	50/10 ratio
1967	1.62	1.89	1.64	2.03
1968	1.57	1.86	1.58	2.01
1969	1.61	1.76	1.64	1.84
1970	1.61	1.80	1.65	1.81
1971	1.64	1.85	1.65	1.85
1972	1.62	1.91	1.65	1.91
1973	1.66	1.90	1.65	1.92
1974	1.68	1.94	1.66	1.97
1975	1.62	1.89	1.64	1.82
1976	1.59	1.89	1.65	1.83
1977	1.62	1.99	1.63	1.98
1978	1.61	2.02	1.64	1.94
1979	1.60	1.98	1.65	1.94
1980	1.62	2.00	1.68	1.88
1981	1.63	2.02	1.68	1.98
1982	1.69	2.08	1.72	1.98
1983	1.69	2.12	1.73	2.03
1984	1.69	2.13	1.72	2.10
1985	1.74	2.16	1.81	2.09
1986	1.73	2.22	1.83	2.08
1987	1.71	2.21	1.81	2.12
1988	1.71	2.17	1.84	2.15
1989	1.79	2.18	1.87	2.11
1990	1.79	2.15	1.83	2.16
1991	1.77	2.19	1.84	2.17
1992	1.78	2.19	1.91	2.16
1993	1.87	2.11	1.96	2.13
1994	1.88	2.17	1.96	2.14
1995	1.83	2.16	1.93	2.16

Source: Council of Economic Advisers tabulations of the March Current Population Survey.

the more skilled labor market, increasing inequality. What might cause such an asymmetry? The increasing numbers of immigrants in the labor market, and the increasing labor force participation rates of women, who tend to have less work experience, could have led to a disproportionate supply shift in the market for less skilled workers.

In analogous fashion, demand-side factors could have influenced the relative wages of more and less skilled workers if they caused the demand curve in the market for more skilled workers to shift outward by more than that in the market for less skilled workers, or (especially) if the demand curve in the latter shifted inward. As shown in Chart 5–7, these changes would increase wages in the more skilled labor market and reduce them in the less skilled labor market, increasing inequality. Technological developments favoring skilled workers (called skill-biased technological change) could have led to such shifts. The integration of new production technologies may have increased firms' demand for workers capable of using these technologies. Evidence indicates, for instance, that workers

Box 5–2.—Earnings Inequality and the Winner-Take-All Society

One provocative hypothesis offered to explain part of the increase in within-group inequality is the expansion of "winner-take-all" markets, where top performers reap far greater rewards than do others whose ability is only slightly inferior. For example, it is not uncommon to see a star professional athlete making millions of dollars a year while another, only slightly less talented athlete earns far less. It has been argued that markets such as these have become more pervasive in the American economy, with the result that ours is increasingly a winner-take-all society.
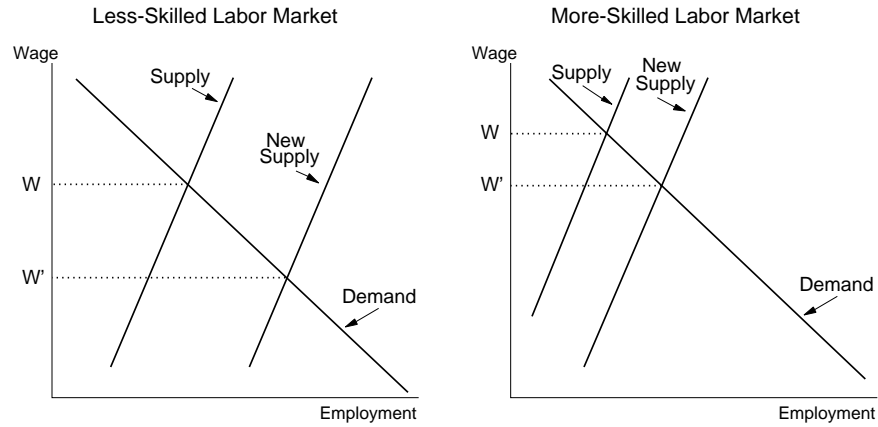
Huge wage premiums for small differences in performance may now be observed in law, medicine, investment banking, academics, and other professions. Windfalls to the top producers in these fields have become increasingly common as computing and telecommunications technology have advanced, facilitating the flow of information, and as transportation costs have been reduced, increasing mobility. These factors increase competition to hire the best performers, increasing their wages. How large a share of the observed increase in earnings inequality may be attributed to the expansion of winner-take-all markets remains unknown.

who use a computer on the job earn significantly more than those who do not.

The expansion of international trade could also have produced the hypothesized shifts in demand curves. Because import industries tend to employ relatively less skilled workers, it is argued that the wages of less skilled American workers are coming under pressure either from direct job loss or from more intense wage bargaining with their own employers, who are now forced to compete internationally. Of course, the demand and supply shifts just described may occur simultaneously, compounding the effect on earnings inequality.
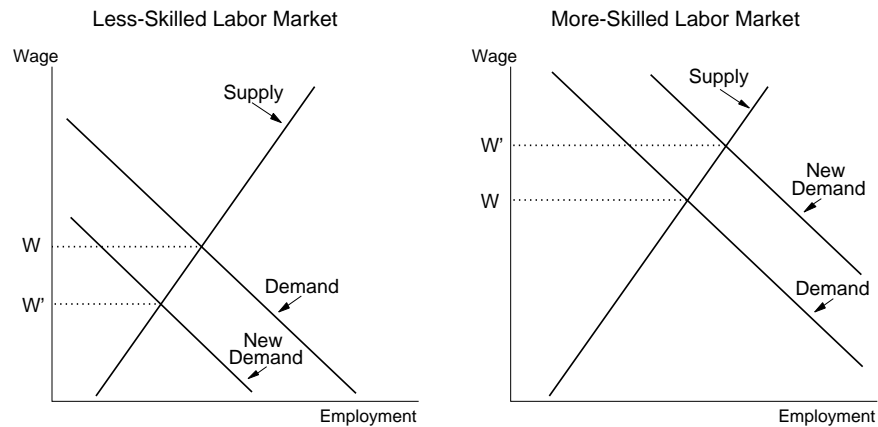
Within this framework, demand shifts appear to play the larger role in explaining growing inequality. Trends in the returns to education provide perhaps the most accessible evidence of the influence of demand shifts, if the assumption is valid that more education translates into higher levels of skill. The returns to a college education rose throughout the 1980s, as noted earlier, even though the college enrollment rate among recent high school graduates grew dramatically over this period. If relative demand for more and less skilled workers had remained constant, the greater supply of college-educated workers should have led to a decline in the college wage premium. The fact that the college wage premium instead

Chart 5-6 **Increase in Inequality Due to Supply Shifts**
Increasing inequality may occur because of shifts in the supply curve
in the less-skilled and more-skilled labor markets.

Less-Skilled Labor Market

Wage

Supply

New
Supply

W

W'

Demand

Employment

More-Skilled Labor Market

Wage

Supply

New
Supply

W

W'

Demand

Employment

Source: Council of Economic Advisers.

Chart 5-7 **Increase in Inequality Due to Demand Shifts**
Increasing inequality may occur because of shifts in the demand curve
in the less-skilled and more-skilled labor markets.

Less-Skilled Labor Market

Wage

Supply

W

W'

Demand

New
Demand

Employment

More-Skilled Labor Market

Wage

Supply

W'

W

New
Demand

Demand

Employment

Source: Council of Economic Advisers.

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rose sharply suggests that demand shifts must have more than outweighed any concurrent supply shock. This framework is useful in explaining within-group inequality as well, because skill differentials will remain within broad demographic categories.

Evidence shows that skill-biased technological change is probably the main contributor to these demand shifts (many experts support this view; see Box 5–3). Some evidence suggests that international trade may be responsible for only a relatively small share of the increase in inequality. For example, even manufacturing firms whose products face little foreign competition have reduced their demand for less skilled workers. Nevertheless, direct evidence of the importance of skill-biased technological change in explaining trends in within-group inequality is difficult to come by. Some studies avoid this difficulty by treating technological change as a residual, attributing rising inequality to this factor when their findings have excluded all other likely candidates.

A final set of explanations suggests that changes in institutional arrangements in the labor market, such as the declining influence of unions and a reduction in the real value of the minimum wage, have led to lower returns for workers in the lower tail of the earnings distribution. Unions have long provided wage premiums to such workers. But the share of employed workers belonging to unions has eroded from a peak of roughly 30 percent through much of the 1950s and 1960s to about 15 percent in 1995. Although research indicates that the decline of unions may indeed have played some role in increased earnings inequality, it probably can explain only a small share of the increase. This finding is consistent with the fact that inequality also increased among groups of workers, such as college graduates, who are unlikely to belong to unions.

The eroding value of the minimum wage also could contribute to earnings inequality. A minimum wage truncates the earnings distribution at its lower end. If more than 10 percent of workers receive the minimum wage, inequality on such measures as the 50/10 earnings ratio will be less than it would be otherwise. Inequality on this measure could even be reduced if the fraction receiving the minimum were less than 10 percent, if "ripple effects" exist whereby workers who would otherwise earn slightly over the minimum instead receive higher wages because of greater competition for their labor. The decline in the real value of the minimum wage through the 1980s is similar in its timing to that of the increase in inequality. It is unlikely to be a leading explanation of rising inequality, however, because inequality also increased within groups of workers, such as older workers, who are unlikely to be affected by the minimum wage.

Box 5–3.—The Experts' Consensus on Earnings Inequality

   Possible explanations for the observed rise in earnings in-
equality during the 1980s and early 1990s include skill-biased
technological change, trade liberalization, demographic shifts,
declining unionization, and rising immigration. Although the
relative importance of each of these is difficult to determine
precisely, some leading economists generally agree as to which
are the main culprits. Participants at a recent colloquium on
this topic at the Federal Reserve Bank of New York—a group
that included many prominent labor economists—viewed tech-
nological change as the strongest contributor.

Some Contributors to Rising Inequality

Average percent contribution
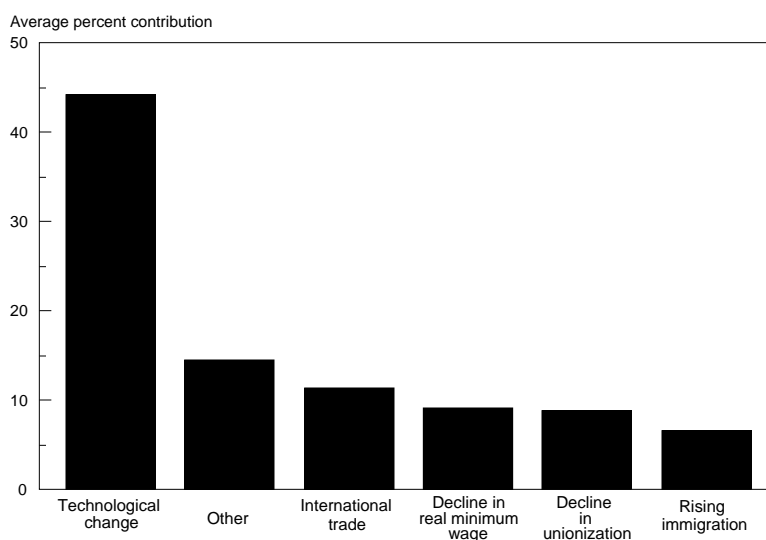
Source: Federal Reserve Bank of New York.

INCOME INEQUALITY

   Household income is a broader measure of economic well-being
than individual earnings, because it aggregates the incomes of all
household members and incorporates other flows of income besides
earnings. Although labor earnings are typically its largest compo-
nent, household income also includes interest and dividend re-
ceipts, cash transfer receipts, and rental payments. Household size
and composition are clearly important factors in determining ob-
served household income. In this section we document the increase
in inequality since the late 1970s and explore its possible causes.

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DOCUMENTING THE INCREASE IN INCOME INEQUALITY

One way to trace changes in income inequality is to separate households into income quintiles and estimate the share of income received by each quintile. (Box 5-4 discusses some problems in income measurement.) Increasing inequality would be manifested by a fall in the share of income going to the lowest quintile and a corresponding rise in the share going to the highest quintile. Chart 5–8 shows just such a pattern in household income quintiles for 1979 and 1995: since 1979 the shares going to the bottom four quintiles have declined, while the share going to the highest quintile has increased.

Changes in income shares over time may mask how well those at the bottom of the income distribution are doing. For instance, if the richest quintile is getting richer but the incomes of all other quintiles are holding constant, the shares of total income received by the lower quintiles would fall, misleadingly suggesting that they are becoming worse off. An alternative approach to documenting changes in the distribution of income, one that examines levels of income for those in different segments of the distribution, may prove beneficial.

Chart 5–9 displays this sort of information for 1979 and 1995. Households are divided into four categories: those with incomes less than $15,000, those between $15,000 and $35,000 (roughly the median in 1995), those between $35,000 and $75,000, and those over $75,000. Incomes are converted into 1995 dollars using the CPI. The chart shows that the share of households in the highest income bracket increased from 10.9 percent to 14.8 percent between 1979 and 1995, while the share in the lowest income bracket remained unchanged. These statistics suggest that some middle-income households have moved up into the higher income categories, but the number of households toward the bottom of the income distribution has remained nearly constant.

This approach may be misleading, however, because the unit of analysis is the household, not the individual. Because household composition has been changing over time, the observation of an unchanged number of households lying below a particular income cutoff may overlook the reality that more people are residing in these households.

One way to focus more directly on the well-being of individuals near the bottom of the income distribution is to examine trends in the poverty rate. Throughout the 1960s and early 1970s the poverty rate fell dramatically, from 22.2 percent in 1960 to 11.1 percent in 1973. (Chart 5–10 shows the trend since 1967.) It remained low throughout the 1970s, ranging from 11.1 percent to 12.6 percent over the decade. In the 1980s the poverty rate rose dramati-

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Box 5–4.—Shortcomings of Household Income Measures

Household income is a useful indicator of economic well-being because it is relatively easy to measure and interpret. It has its shortcomings, however. For instance, it does not incorporate taxes or payments made in kind, such as food stamps and housing subsidies. To the extent that the tax system is progressive and that in-kind transfers are means-tested, use of an after-tax-and-transfer definition of income would reduce the measured level of inequality. Although some analysts have adapted the standard income-based measures to include the value of in-kind income, economists have not agreed on the best method for doing so. Some value in-kind benefits according to the cost of providing them, and others according to what an individual would be willing to pay to receive the benefit. In any case, research incorporating taxes and in-kind payments shows trends in inequality that are similar to those reported by standard measures.

Another problem is that differences in household size will lead to different assessments of the economic well-being of individuals with the same household income. Attempts to abstract from differences in household size have proceeded by developing "equivalence scales" that adjust household income for the number of household members. Other approaches scale the incomes of larger households by progressively smaller amounts for each additional member. Even after making these adjustments for differences in household size, however, income inequality appears to be increasing.

Despite these obstacles, alternative measures of income are being tested by the Bureau of the Census, and others have been proposed by the National Academy of Sciences (NAS). The Census Bureau produces a series of 17 experimental estimates of income in an attempt to gauge the effects of various noncash government benefits and taxes on income levels and on poverty. The NAS proposes another definition of income to be used in the measurement of poverty that adds noncash benefits to money income and subtracts taxes, some work expenses, some child care expenses, child support payments, and medical out-of-pocket expenses. It would also adjust the equivalence scale currently used in poverty calculations. Measures such as the Census experimental series and those proposed by the NAS are intended to reflect the effects of government policy initiatives. Nevertheless, no clear consensus exists regarding certain complex methodological issues, including valuation of some benefits such as medical and child care.

Chart 5-8 **Change in Share of Income Received by Each Quintile from 1979 to 1995**
The share of money income going to the top 20 percent of all households increased
between 1979 and 1995 at the expense of all other households.

Percent change
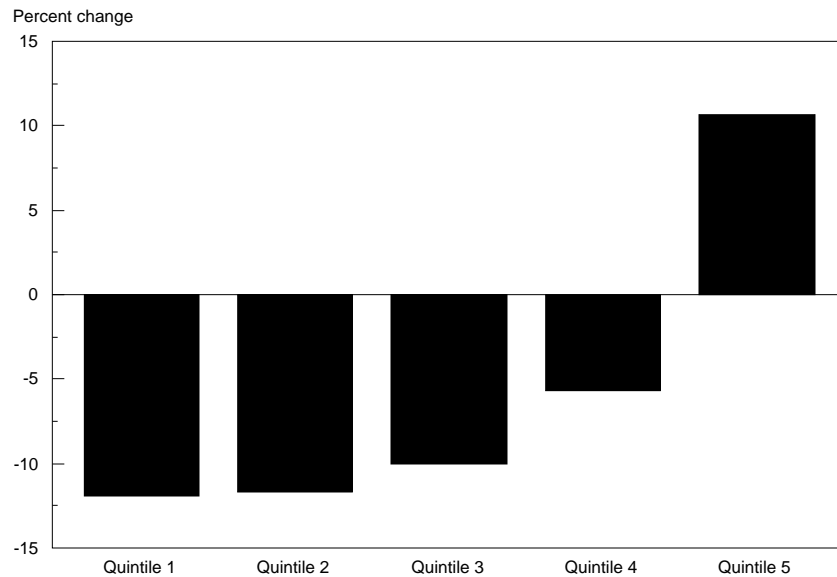
Source: Department of Commerce.

Chart 5-9 **Share of Households by Real Income Range**
In 1995, a larger proportion of households had incomes over $75,000 (in 1995 dollars)
than in 1979.

Percent of households
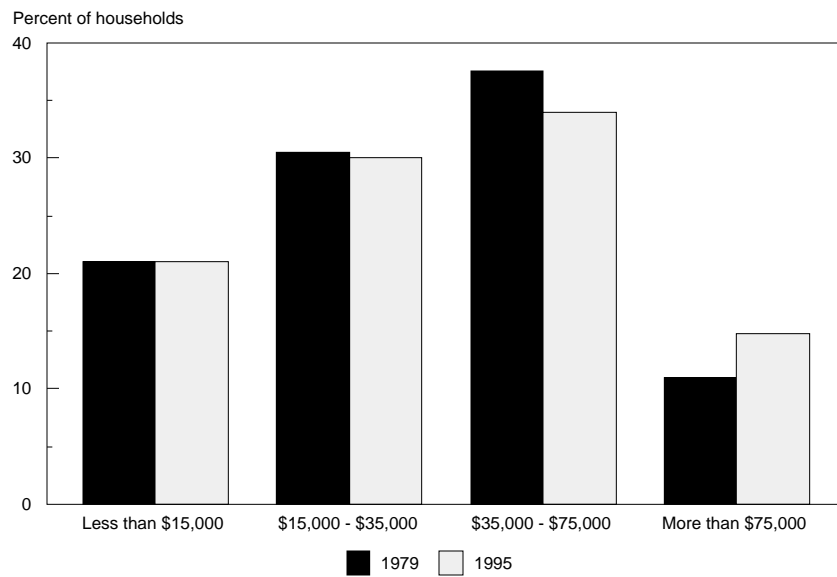
Note: Income adjusted by CPI-U-X1.
Source: Department of Commerce.

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cally and has fallen below 13 percent only once since then, in 1989 following 6 years of economic expansion.

The composition of the impoverished population has also changed over time, especially with respect to age. The percentage of children living in poverty rose from 14.4 percent in 1973 to 22.7 percent in 1993, but has fallen somewhat since then. On the other hand, the poverty rate for those over 65 used to be considerably higher than that for the population as a whole (24.6 percent compared with 12.6 percent in 1970), but mainly because of the Social Security system, poverty among this group has actually fallen below the overall poverty rate since 1982. The elderly poverty rate reached an all-time low of 10.5 percent in 1995, falling significantly below that for the 18- to 64-year-old population for the first time ever.

Chart 5-10 **Poverty Rates**
The overall increase in poverty since the 1970s comprises an increase in poverty among children but a decrease in poverty among those age 65 and older.

Percent
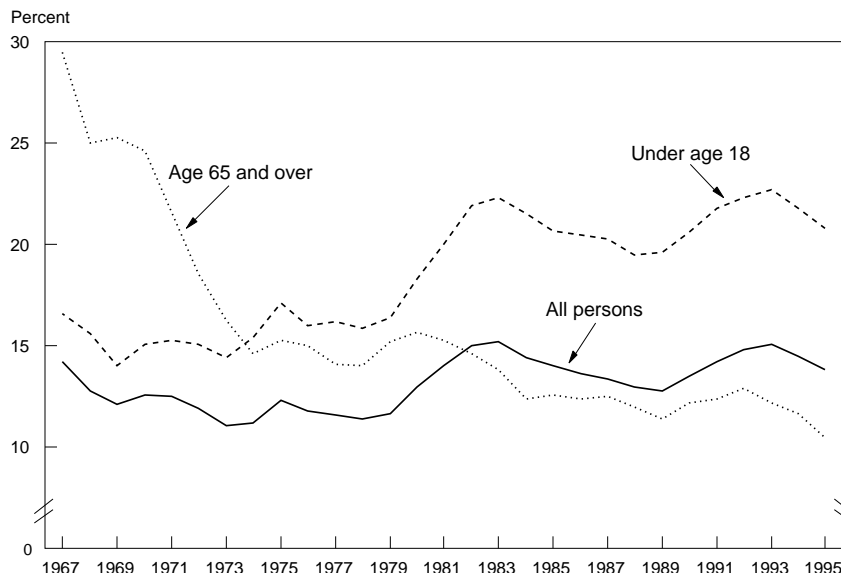
Source: Department of Commerce.

The transition from a poverty population that is disproportionally elderly to one that is more heavily weighted toward households with children suggests that the household size of the low-income population has increased over time. This is consistent with the coexistence of a rising share of low-income individuals and a constant share of low-income households. The effect of

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changes in household composition on income inequality is explored more fully below.

EXPLANATIONS FOR INCREASING INCOME INEQUALITY

Because measurements of income inequality incorporate all sources of a household's income, including labor market earnings, it should come as no surprise that a major contributor to increasing income inequality across households is rising earnings inequality across workers. In fact, about half of the increased inequality in household incomes over the 1980s can be explained by trends in earnings inequality among men.

Part of the remaining share can be attributed to changes in household composition and, in particular, to the increase in female-headed households. The share of family households headed by women has risen rapidly, from just over 10 percent in 1970 to about 18 percent in 1995. These households are more likely to receive lower incomes because they lack a second wage earner, because women earn less on average than men, and because some of these women do not work at all. Therefore the growing share of this type of household has worsened income inequality. In fact, the rise in the percentage of children in poverty over the past 25 years is strictly due to the increase in the number of children residing in female-headed households, whose poverty rates are higher than those for children living in other circumstances. The poverty *rate* among children in female-headed households has actually decreased over time.

Research suggests that the rapid rise in female labor force participation has also contributed to growing inequality. This finding is not obvious, however, because in some ways a rise in the number of working women serves to reduce inequality. For instance, the distribution of women's earnings is more compressed than that of men, so that increasing female labor force participation should reduce overall earnings inequality. If all men and women lived alone, this reduction in earnings inequality and the reduction in the number of people with zero earnings (because of increased employment) would also reduce income inequality.

Inequality may nonetheless increase in response to greater female labor force participation because people tend to marry persons whose earnings potential is similar to their own. For example, more educated men may be more likely to marry more educated women. The increase in employment among married women could therefore increase household inequality in one of two ways. First, if women in high-income households are joining the labor force in greater numbers than women from low-income households, their earnings will push their household incomes even further beyond

the middle of the distribution, and income inequality will increase. This hypothesis is not supported by the data, however, as labor force participation rates for women have risen roughly equally across households ranked by the husband's earnings level. Second, for working couples, rising earnings inequality will be compounded at the household level if men with high earnings are married to women with high earnings. Taken as a whole, the evidence suggests that women's increasing labor force participation has contributed somewhat to growing income inequality during the 1980s.

Income inequality can also be affected by changes in unearned income across households. The source of the unearned income determines whether or not it increases or decreases the income inequality that would occur from earnings alone. For example, property income is more likely to be received by individuals with higher earnings, and therefore an increase in property income would tend to worsen inequality. Transfer payments are more likely to go to individuals with lower earnings, and an increase in transfers would therefore tend to reduce inequality. Research suggests that, on balance, nonlabor income tended to increase inequality during the 1980s. The effect of these changes is still significantly less than that caused by growing earnings inequality, however.

ALTERNATIVE MEASURES OF INEQUALITY

This discussion, like much of the economic literature on inequality, has focused on inequality in annual earnings and household income. However, appropriate borrowing and saving behavior can smooth year-to-year fluctuations in income, making consumption less variable, provided households have appropriate access to credit markets. Therefore differences in lifetime income across households may offer a more valuable perspective on differences in well-being.

Of course, one cannot reliably measure lifetime income when much of that income has yet to be received. Lifetime income is thus an inherently unmeasurable concept, and analysts must resort to using related measures as a basis for estimating it. One such measure is consumption, on the theory that households set consumption levels according to their own assessments of their lifetime income. A potential problem here is that a household may have large asset holdings, indicating the potential to raise its consumption in the future, but choose to limit its consumption for the present. Therefore, another indicator used to examine lifetime income inequality across households is household wealth.

Another way to address differences in lifetime income across households is to examine income mobility—the extent to which households move across the income distribution over time. Increasing annual income inequality is more meaningful as an indicator

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of lifetime income differences across households if income mobility does not increase as well.

CONSUMPTION INEQUALITY

If consumption decisions are based on households' assessments of their lifetime income, then inequality in consumption can be used as a proxy for inequality in lifetime income. For example, a middle-income household that suffers a brief spell of reduced income will not change its consumption habits much, whereas a household with regularly low income will consume considerably less. Therefore we can expect to see less inequality in consumption than in annual income.

Some evidence supports this proposition: studies have found that the distribution of consumption is more concentrated than that of income. In other words, individuals do appear to prefer to smooth their consumption levels across their lifetimes through borrowing and saving. One difficulty in comparing the distributions of income and of consumption is that income is measured before taxes and in-kind transfers, whereas consumption is based on after-tax income and includes in-kind transfers. To the extent that taxes and in-kind transfers reduce inequality (an issue that is discussed below), one would expect consumption inequality to be less than income inequality. During the 1980s, consumption inequality rose along with income inequality, but in the early 1990s the two diverged. Between 1989 and 1993, consumption inequality leveled off while income inequality continued to rise. Some demographic groups, particularly households headed by a high school graduate or dropout, experienced large declines in consumption inequality over the period. No obvious explanation for the timing of the turnaround in consumption inequality or its comparison to income inequality exists.

WEALTH INEQUALITY

Another shortcoming in using annual income as a measure of differences in economic well-being is that it does not capture the purchasing power of a household's asset holdings. Therefore differences across households in terms of net wealth (which consists of cash savings, financial assets, and the value of physical assets such as a house or a car, less any outstanding debt) provide an alternative indicator of inequality.

Data on wealth are limited, but one source, the Survey of Consumer Finances, sponsored by the Federal Reserve Board does provide comparable data for 1983, 1989, and 1992. Over these years median family net wealth (estimated at $52,000 in 1992) has been fairly stable. Wealth is concentrated in the hands of a small number of families, and the degree of that concentration has re-

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mained fairly constant. The wealthiest 10 percent of families have owned roughly 67 percent of total net wealth since the early 1980s. The top 1 percent of families did increase their wealth holdings from around 30 percent of total net wealth in 1983 to 37 percent in 1989, but their share fell back to 30 percent by 1992. The stock market boom of the 1980s might have led one to predict increasing concentration, but stock ownership has become more widespread over time. In addition, home values increased over the period, and home ownership is far more common than stock ownership.

MOBILITY

If a household's income varies widely from year to year, annual measures of inequality may provide a very inaccurate picture of lifetime inequality. If the increase in annually measured income inequality over the past 20 years or so has been accompanied by an increase in income fluctuations, it is possible that lifetime incomes have been unaffected. For instance, if new labor market entrants make less than previous entrants, but their wages grow more rapidly as they gain experience, then annual measures of income inequality will be greater, as will income mobility, but lifetime income may be unchanged. Therefore the degree of mobility through the income distribution is another means of examining the difference between annual and lifetime income. (A related issue of mobility between parents and children is explored in Box 5–5.)

Studies of mobility have compared household incomes over varying periods, such as 1 year, 5 years, and 10 years. One-year changes in income are likely to reflect short-term changes, such as temporary job loss, as well as measurement errors in reported income that are not perfectly correlated between years. Longer term changes will also incorporate these events but are more likely to identify more permanent changes in incomes, which are particularly large among younger households. Therefore one might expect mobility over longer periods to be greater than that from year to year.

A standard approach in estimating income mobility is to rank households by their income in each of two years, separate them into quintiles in each year according to their rank, and then see to what extent households have moved from quintile to quintile between the two years. Results from these studies indicate a reasonably high degree of mobility over time. One study finds that about 3 out of every 10 households move between quintiles from one year to the next. As one would expect, mobility is greater over longer periods: almost two-thirds of households change income quintiles over 10 years. These mobility rates do not appear to be increasing over time. The probabilities of making a transition between income quintiles over periods of varying lengths have remained roughly

Box 5–5.—Intergenerational Mobility

Another issue relating to income mobility is the extent to which income is transferred between parents and children. If the correlation between parents' income and their children's income as adults is high, then a child is likely to experience a level of economic well-being similar to that of his or her parents (i.e., intergenerational mobility will be low). If the two generations' incomes are not correlated, children will have no greater probability of ending up in one income quintile than in another. Early studies found a low correlation: intergenerational mobility was quite high. The son of a high-income father would have the same probability as anyone else of residing at any given point in the income distribution after only two generations.

An important problem with these studies, however, is that they ignored measurement error in reported income. If reported levels of income of either the father, the son, or both were inaccurate, the resulting estimates of the correlation in income would be biased toward zero. More recent studies have paid careful attention to the measurement error issue and the bias it introduces. These studies found a considerably higher correlation and thus a considerably smaller degree of intergenerational mobility than did previous work. Their results indicate that it would take four generations before the son of a high-income father had a roughly equal probability of residing at any point in the income distribution.

steady through the 1970s and 1980s. The evidence thus does not appear to support the proposition that rising income inequality has been offset by increasing income mobility.

One issue in interpreting these studies is that transitions over time between income quintiles may occur because of changes in the flow of income (mainly earnings) or changes in household composition. A person who marries is likely to experience a significant increase in household income if his or her spouse works, even if that person's earnings remain constant.

An alternative approach that some researchers have taken in examining mobility is to focus exclusively on individuals' earnings and transitions that occur between earnings quintiles over time. Again, mobility rates are reasonably high, with higher transition rates over longer time periods. Roughly 3 in 10 individuals change earnings quintiles between one year and the next, and almost half make such a transition over 5 years, according to one study. As

Percent
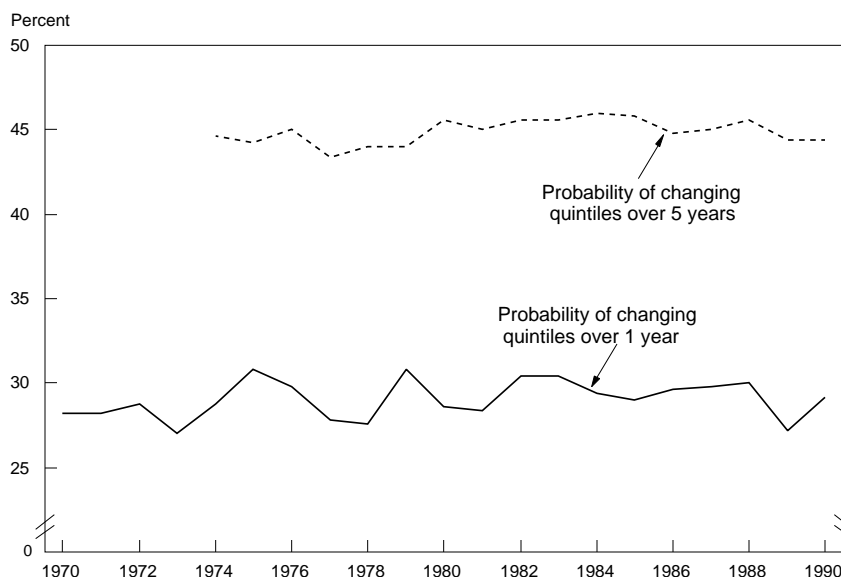
Source: Unpublished calculations by R. Burkhauser, D. Holtz-Eakin, and S. Rhody, Syracuse University.

with income mobility, no trend over time is apparent in earnings mobility (Chart 5–11).

GOVERNMENT POLICY AND INEQUALITY

Without government intervention, the distribution of income would be even more dispersed than it is. A progressive Federal income tax and a variety of Federal and State transfer programs have for decades worked to reduce inequality. More recently, several new policies have been put in place to reduce inequality further, particularly by improving the conditions of those toward the bottom of the income distribution.

ASSESSING THE IMPACT OF GOVERNMENT POLICY

Incorporating the effect of tax and in-kind transfer policies into income measures poses two challenges. First, a household's tax burden and the value of noncash benefits such as food stamps and Medicaid need to be calculated, and this calculation is subject to ambiguities (Box 5–4). Second, calculating income in the absence of government as conventionally measured income less transfers assumes that the availability of the transfers has no impact on recipients' other income. Still, after taxes and transfers have been taken into account to the extent possible, government policy is shown to

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reduce inequality significantly. The progressivity of the Federal individual income tax system, together with all payroll taxes and State income taxes, reduces the Gini index by about 5 percent. Transfer payments account for an even larger reduction in the Gini index, of around 20 percent. The program that contributes perhaps the most to reducing inequality is Social Security, as one might expect from the relatively low poverty rate among older Americans.

The incidence of poverty is similarly affected by government policies. The officially reported poverty rate of 13.8 percent in 1995 would have been 21.9 percent if cash transfers were not included in income. Moreover, when incomes are measured according to the most comprehensive measure, which includes all taxes and the earned income tax credit (EITC) as well as the valuation of in-kind transfers, the poverty rate is estimated to be only 10.3 percent.

ADDITIONAL POLICIES TO REDUCE INEQUALITY

Both short-run and long-run policies are needed to help reduce income inequality. In the short run, the EITC can help raise the incomes of workers with low earnings. The EITC is a refundable tax credit of up to 40 percent of earnings, depending on family size. The credit was expanded in both 1990 and 1993, with both an increase in its value and a broadening of the covered population to include very low wage workers who do not reside with children. The number of families receiving the credit rose from 12.6 million in 1990 to an estimated 18 million in 1996. Between 1990 and 1996 the average credit per family more than doubled, from $601 to an estimated $1,400. In 1995 almost 3.3 million people were lifted out of poverty by the EITC, more than twice as many as only a few years before.

The recent increase in the minimum wage may also play a part in reducing inequality. Between 1981 and April 1990, the minimum wage remained constant at $3.35 per hour even as inflation eroded its value by 44 percent. The 27 percent increase in the minimum wage in April 1990, to $4.25 an hour, did not restore it to its real 1981 level. Inflation then eroded the value of the minimum wage another 23 percent up to October 1996, when it was increased to $4.75; that increase is to be followed in September 1997 with a further increase to $5.15.

Although even these raises will not restore the purchasing power of the minimum wage to its 1981 level, the minimum wage and the EITC together do more to reduce inequality today than they did then. For example, a single parent with two children earning $5.15 per hour for 40 hours per week, 50 weeks per year in 1998 would make $9,775 (in 1996 dollars) before the EITC and $13,343 including the EITC. Without the 1996–97 minimum wage increases, this family's income including the EITC would have been only $11,294.

The combination of the recent rise in the minimum wage with the expansion of the EITC makes the returns to work for minimum wage workers greater than in 1981, when the minimum wage was higher in real terms. In that year the same family, with the parent working the same hours but earning the minimum wage of $3.35, would have received $11,336 (in 1996 dollars) before the EITC and $12,034 including the less generous EITC available at that time.

In the long run, greater access to education and training programs should reduce inequality by reducing the wage premium associated with additional training. In terms of the simple labor market model presented above, as more workers obtain additional education, the supply of more highly skilled workers shifts outward and that of less skilled workers shifts inward (again assuming that more education translates into higher levels of marketable skill). These shifts increase the wages of the less skilled relative to those of the more skilled, reducing inequality between the two groups.

Improved access to education and training can also reduce inequality if it allows individuals from lower income households to make investments in their human capital that they could not make otherwise. Programs such as Head Start can provide disadvantaged preschoolers the opportunity to begin formal schooling with the intellectual tools they need to flourish. The recently inaugurated Federal direct student loan program has also provided benefits to students and schools. The Federal Government now issues loans directly to students through the financial aid offices of their colleges, rather than through commercial financial intermediaries, and offers four different repayment options, including an income-contingent payment plan. In the 1996/97 academic year, 1.9 million students will have participated in the program, which is widely viewed as successful in providing more timely, flexible, and accessible service to both students and universities.

CONCLUSION

Income inequality in the United States has risen over the past two decades. Its very persistence means that this trend will be difficult to change. Even recognizing the reversal when it does occur will be difficult enough, because statistical analysis cannot easily distinguish a decisive turnaround in inequality from a relatively brief pause in its rise. It is still too soon to tell whether the promising statistics reported in the past few years represent a true reversal or just such a pause.

Because of this uncertainty, continued vigilance is required to find ways to help alleviate inequality, particularly to the extent that it can reduce hardship for those at the bottom of the economic ladder. Some changes have already been instituted, such as the in-

crease in the minimum wage and the expansion of the EITC. Improved access to education and training is also essential. Although these represent useful first steps, much remains to be done.